MONTHLY WEATHER REVIEW.

VOL. XIV. WASHINGTON CITY, OCTOBER, 1886. No. 10.

INTRODUCTION.

This REVIEW contains a general summary of the meteorological conditions which prevailed over the United States and Canada during October, 1886, based upon the reports from the regular and voluntary observers of the Signal Service and from co-operating state weather services.

Descriptions of the storms which occurred over the north Atlantic Ocean during the month are also given, and their approximate paths shown on chart i. In tracing the centres of the paths of these storms, data from the reports of one hundred and ninety-three vessels have been used.

On this chart is also shown the distribution of icebergs reported during the month.

On chart i for this month are traced the paths of nine areas of low pressure; the average number for October during the last thirteen years being 10.5.

The most severe storm of the month, described as number vi, was quite destructive during its passage over the upper Mississippi valley and the Lake region on the 14th; it was accompanied by high winds and unusually low barometer, the lowest recorded being 28.93, at Mackinaw City, Michigan, at 3 p. m. of the 14th.

Owing to the heavy storm that prevailed in the Gulf of Mexico from the 9th to the 12th very high tides occurred along the Gulf coast on the 12th, causing considerable loss of life and property in Louisiana and eastern Texas.

A noteworthy feature in connection with the meteorology of the month is the fact that the mean barometric readings are decidedly above the normal in all parts of the country lying east of the Rocky Mountains, while the rainfall of the same districts is largely deficient as compared with the normal.

The mean temperature is above the normal in the upper lake region, upper Mississippi valley, Missouri Valley, the extreme northwest, and in eastern Montana; in the Southern States and along the Pacific coast it is below the normal; the departures in the other districts are small.

Under "Notes and extracts" in this REVIEW will be found a paper by Junior Prof. T. Russell containing the results and a short discussion of the comparative readings of still and whirled wet and dry-bulb thermometers as made at thirty-seven Signal Service stations during August and September, 1886.

Mr. M. A. Veeder, of Lyons, New York, furnishes an interesting note on sun spots and attending phenomena.

In addition to the regular reports from the cotton districts a table is given showing the average rainfall and mean of the maximum and minimum temperatures during the growing season from 1882 to 1886, inclusive, also the total acreage and yield of cotton for the first four years mentioned.

In the preparation of this REVIEW the following data, received up to November 20, 1886, have been used, viz., the regular tri-daily weather-charts, containing data of simultaneous observations taken at one hundred and thirty-three Signal Service stations and twenty-one Canadian stations, as telegraphed to this office; one hundred and sixty-four monthly journals; one hundred and fifty-six monthly means from the former, and twenty-one monthly means from the latter; two hundred and seventy-eight monthly registers from voluntary observers; fifty-five monthly registers from United States Army post surgeons; marine records; international simultaneous observations; marine reports through the co-operation of the "New York Herald Weather Service;" abstracts of ships' logs furnished by the publishers of "The New York Maritime Register;" monthly weather reports from the local weather services of Alabama, Indiana, Illinois, Iowa, Minnesota, Mississippi, Missouri, Nebraska, New England, Ohio, and Tennessee; trustworthy newspaper extracts, and special reports.

ATMOSPHERIC PRESSURE.

[*Expressed in inches and hundredths.*]

The distribution of mean pressure for October, 1886, determined from the tri-daily telegraphic observations of the Signal Service, is shown by isobarometric lines on chart ii.

The mean atmospheric pressure of the United States during the month is greatest over the country lying east of the Mississippi River; over this area the pressure averages about 30.17. An examination of chart ii will show that the area of maximum pressure, enclosed by the isobar of 30.20, extends over Tennessee, Kentucky, and the southern part of Indiana and Ohio; within this area the highest pressure, 30.22, occurred at Knoxville, Tennessee. From this isobar the pressure decreases in all directions until the isobar of 30.15 is reached. This line extends along the Atlantic coast from Eastport, Maine, to Savannah, Georgia, and includes the greater portion of the country lying east of the Mississippi River. The area of minimum pressure, within which the mean for the month is 29.95 or less, covers southeastern California, southern Nevada, southwestern Utah, and western Arizona. The lowest barometric mean for the month, 29.91, is reported from Frisco, Utah. Two areas of comparatively low pressure, indicated by the isobar of 30.00, are also found on chart ii; one extends over northern Dakota and Montana, the other covers southern Florida.

The departures from the normal pressure are given in the table of miscellaneous meteorological data, and are also shown on chart iv by lines connecting stations of equal departure. The mean pressure for the month, when compared with the normal as deduced from the observations of the past fourteen years, will be found to be in excess in all parts of the country except over a comparatively small area covering the northern and middle plateau regions, where the pressure is normal or slightly below. The largest departures occur in the Ohio and Mississippi valleys, the Lake region, and in Tennessee, where they range from .06 to .13 in excess of the normal. In the states bordering on the Atlantic Ocean and Gulf of Mexico the pressure averages about .06 in excess of the normal, and ranges from .04 at Boston, Massachusetts, to .10 at Galveston and Brownsville, Texas. On the Pacific slope the departures in excess of the normal vary from .02 at Fort Canby, Washington Territory, to .08 at Los Angeles and San Diego, California.